

Application No. 10/646,070
Amendment dated February 28, 2007
Reply to Office Action of August 28, 2006

Docket No. 025122.0101N1US

BEST AVAILABLE COPY**AMENDMENTS TO THE CLAIMS**

1-47. (Canceled)

48. (Currently amended) An isolated genetic construct, A synthetic gene which
wherein said genetic construct is capable of post transcriptionally delaying, repressing or
otherwise reducing the expression of a target gene in a human cell which is transfected or
transformed with the synthetic gene genetic construct by sequence specific degradation of a RNA
transcript of the target gene by an endogenous system of the human cell, comprising a structural
gene region which

wherein the genetic construct comprises at least two multiple copies of a structural gene
sequence;

wherein the structural gene sequence comprises a nucleotide sequence of greater than 20
consecutive nucleotides which is at least 80% identical to the sequence of the target gene or a
region thereof, and

wherein the at least two copies of multiple copies of the nucleotide sequence are
arranged in the structural gene sequence region in an interrupted palindrome sequence and is
placed operably under the control of at least one a single promoter sequence which is operable in
the human cell, and

wherein at least one copy of the structural gene sequence is placed operably in the sense
orientation under the control of the at least one promoter.

49-106. (Canceled)

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107. (New) The synthetic gene of claim 48, wherein the copies of the nucleotide sequence that comprise the interrupted palindrome are separated by a sequence of nucleotides.

108. (New) The synthetic gene of claim 48, wherein the nucleotide sequence which is identical to the target gene or region thereof is from greater than 20 to 100 nucleotides long.

109. (New) The synthetic gene of claim 107, wherein the sequence of nucleotides separating the copies of the nucleotide sequence is 10-50 nucleotides in length, 50-100 nucleotides in length, or 100-500 nucleotides in length.

110. (New) A synthetic genetic construct, comprising a synthetic gene and a genetic sequence which provides for the maintenance and/or replication of the genetic construct in prokaryotes or eukaryotes and/or the integration of the genetic construct or a part thereof into the genome of a eukaryotic cell or organism,

wherein the synthetic gene is capable of reducing the expression of a target gene in a human cell transfected or transformed with the synthetic gene, wherein the synthetic gene comprises a structural gene region having multiple copies of a nucleotide sequence of greater than 20 consecutive nucleotides which is identical to the sequence of the target gene or a region thereof, and

wherein multiple copies of the nucleotide sequence are arranged in an interrupted palindrome sequence and placed operably under the control of a single promoter sequence which is operable in the human cell.

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111. (New) The synthetic genetic construct of claim 110, wherein the copies of the nucleotide sequence that comprise the interrupted palindrome are separated by a sequence of nucleotides.

112. (New) The synthetic genetic construct of claim 110, wherein the nucleotide sequence which is identical to the target gene or region thereof is from greater than 20 to 100 nucleotides long.

113. (New) The synthetic genetic construct of claim 111, wherein the sequence of nucleotides separating the copies of the nucleotide sequence is 10-50 nucleotides in length, 50-100 nucleotides in length, or 100-500 nucleotides in length.

114. (New) The synthetic genetic construct of claim 110, wherein the genetic sequence comprises one or more origins of replication and/or selectable marker gene sequences.

115. (New) The synthetic genetic construct of claim 110, which is encapsulated in a liposome.

116. (New) The synthetic genetic construct of claim 110, which is in a virus particle.

117. (New) The synthetic genetic construct of claim 116, wherein the virus particle is an attenuated virus or associated with a virus coat.

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118. (New) The synthetic genetic construct of claim 110, which is in a recombinant viral vector.

119. (New) The synthetic genetic construct of claim 117, wherein the viral vector is a retrovirus or a lentivirus.

120. (New) The synthetic gene of claim 48, wherein the target gene is from a viral pathogen of the human cell.

121. (New) The synthetic genetic construct of claim 110, wherein the target gene is from a viral pathogen of the human cell.

122. (New) The synthetic gene of claim 48, wherein the promoter is selected from the group consisting of an SV40 late promoter, an SV40 early promoter, an RSV-LTR promoter and a CMV IE promoter.

123. (New) The synthetic genetic construct of claim 110, wherein the promoter is selected from the group consisting of an SV40 late promoter, an SV40 early promoter, an RSV-LTR promoter and a CMV IE promoter.

124. (New) The synthetic gene according to claim 48, wherein the region of the target gene encodes an amino acid sequence.

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125. (New) The synthetic genetic construct of claim 110, wherein the region of the target gene encodes an amino acid sequence.

126. (New) The synthetic gene of claim 48, wherein the region of the target gene does not encode an amino acid sequence.

127. (New) The synthetic genetic construct of claim 110, wherein the region of the target gene does not encode an amino acid sequence.

128. (New) The synthetic gene of claim 48, wherein the target gene is derived from the genome of a pathogen of the human cell.

129. (New) The synthetic genetic construct of claim 110, wherein the target gene is derived from the genome of a pathogen of the human cell.

130. (New) The synthetic gene of claim 48, wherein the target gene is endogenous to the genome of the human cell.

131. (New) The synthetic genetic construct of claim 110, wherein the target gene is endogenous to the genome of the human cell.

132. (New) A composition comprising the synthetic genetic construct of claim 110 and a carrier, excipient or diluent suitable for human application.

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133. (New) A human cell in cell or tissue culture, comprising a synthetic gene which comprises a structural gene region which comprises multiple copies of a nucleotide sequence of greater than 20 consecutive nucleotides which is identical to the sequence of a target gene in the cell or a region thereof, and

wherein multiple copies of the nucleotide sequence are arranged in the structural region in an interrupted palindrome sequence and placed operably under the control of a single promoter sequence which is operable in the human cell.

134. (New) The human cell of claim 133, wherein the structural gene region is transcribed in the human cell.

135. (New) The human cell of claim 133, wherein the cell has a reduced level of expression of the target gene.

136. The human cell of claim 133, wherein the copies of the nucleotide sequence that comprise the interrupted palindrome are separated by a sequence of nucleotides.

137. (New) The human cell of claim 133, wherein the nucleotide sequence which is identical to the target gene or region thereof is from greater than 20 to 100 nucleotides long.

138. (New) The human cell of claim 136, wherein the sequence of nucleotides separating the copies of the nucleotide sequence is 10-50 nucleotides in length, 50-100 nucleotides in length, or 100-500 nucleotides in length.

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139. (New) A process of modifying a human cell in cell or tissue culture, comprising the step of introducing the synthetic gene of claim 48 into the cell.

140. (New) A process of modifying a human cell in cell or tissue culture comprising the step of introducing the genetic construct of claim 110 to said human cell.

141. (New) The process of claim 139, wherein the introducing step further comprises transient transfection of said cell.

142. (New) The process of claim 140, wherein the introducing step further comprises transient transfection of said cell.

143. (New) The process of claim 139, wherein the introducing step further comprises stable transfection of said cell.

144. (New) The process of claim 140, wherein the introducing step further comprises stable transfection of said cell.

145. (New) A process of modifying a human cell, comprising contacting the human cell with the composition of claim 132.

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